

POWER AND GROUND SHIELD MESH
TO REMOVE BOTH CAPACITIVE AND INDUCTIVE SIGNAL COUPLING
EFFECTS OF ROUTING IN INTEGRATED CIRCUIT DEVICE

ABSTRACT OF THE INVENTION

A power and ground shield mesh to remove both capacitive and inductive signal coupling effects of routing in integrated circuit device. An embodiment describes the routing of a shield mesh of both power and ground lines to remove noise created by capacitive and inductive coupling. Relatively long signal lines are routed in between fully connected power and ground shield mesh which may be generated by a router during the signal routing phase or during power mesh routing phase. Leaving only the odd tracks or the even tracks for signal routing, power mesh (VDD) and ground mesh (VSS) are routed and fully interconnected leaving shorter segments and thereby reducing the RC effect of the circuit device. Another embodiment presents a technique where the signals are shielded using the power and ground mesh for a gridless routing. Another embodiment presents a multi-layer grid routing technique where signals are routed on even grid and the power and ground lines are routed on odd grid. A similar embodiment represents grid routing technique where the signals are routed between layers N and N+1. Another embodiment enables signals to be shielded by opposite power and ground grids on left, right, top and bottom. Additional embodiments also include utilization of similar mesh utilized in standard cell and/or in the gate array routing area or any other area where any other signal line is to be shielded.